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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/843,168	04/27/2001	Thomas Schilling	P 280255 RRD10403PUS-3MK	8590
7590 Timothy J. Klima Harbin, King & Klima 500 9th Street, S.E. Washington, DC 20003			EXAMINER FREAY, CHARLES GRANT	
			ART UNIT 3746	PAPER NUMBER

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/12/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

09/843,168

Applicant(s)

SCHILLING ET AL.

Examiner

Charles G. Freay

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 2-4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

This office action is in response to the decision on the petition under 37 CFR 1.137 (b) of November 17, 2006 and the amendment of September 15, 2006. In making the below rejections the examiner has considered and addressed each of the applicant's arguments.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 5-7, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/27766 to Brehm (For reference purposes of the rejection reference is made to the corresponding US Pat. 6,058,710) in view of Ansart et al (USPN 5,934,067).

Brehm discloses gas turbine annular combustor. The examiner notes that Fig. 1 in WO '766 and Fig. 1 in the present application are identical including single rows (9) of ports on the outer flame tube wall (10) and the inner flame tube wall (12). Claim 5 is rejected in view of the element 9 in Brehm, because a round drill drilling on a surface perpendicular to its axis drills a circular hole. Claim 6 is rejected in view of element 14 in Brehm because a round drill drilling on a surface that is not perpendicular to its axis drills a non-circular hole. Claim 7 is rejected in view of elements 9 in Brehm. Claim 10 is rejected on the limitation of the lower port 9 in Fig. 1, because the lower arrow 9 is inside the angle formed by the extension of upper arrow 9 extending to the center of the hole of arrow 9 and the line extending from said center to the center of the exit plane of burner 4. Claim 11 is rejected as a matter of obvious design optimization of the size of hole h as a function of the requested air mass flow rate and the depth of penetration of said air into the combustion zone. Brehm does not disclose the holes of the second arrangement are circumferentially aligned off-center with the ports of the first row. Ansart et al discloses an annular combustor having a first row of ports in an outer flame tube wall (17) and a second row of ports in an inner flame tube wall (14) where the holes are aligned circumferentially off-center (see Fig. 2). At the time of the invention it would have been obvious to one of ordinary skill in the art to arrange the ports 9 of

Brehm to be circumferentially off-center as taught by Ansart et al in order to enhance mixing and complete combustion within the combustion chamber.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO '766 in view of Ansart et al as applied to claim 1 above, and further in view of DE '258.

As set forth above WO '766 in view of Ansart et al discloses the invention substantially as claimed but does not disclose that the ports are plunged holes. DE '258 teaches that it was known in the art to make plunged holes with small rims in flame tubes. At the time of the invention it would have been obvious to one of ordinary skill in the art to make the WO '766 holes as plunged holes as taught by DE '258 as a matter of manufacturing convenience.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO '766 in view of Ansart et al as applied to claim 1 above, and further in view of DE 197 20 402.

As set forth above WO '766 in view of Ansart et al discloses the invention substantially as claimed but does not disclose that the ports are tubular chute holes in the flame-tube walls. DE '402 discloses tubular chute holes in flame tube walls. At the time of the invention it would have been obvious to one of ordinary skill in the art to make the holes of WO '766 as tubular chutes as taught by DE '402 as a matter of manufacturing convenience.

***Response to Arguments***

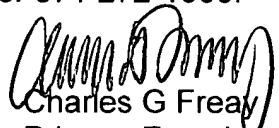
Applicant's arguments with respect to claims 1 and 5-11 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles G. Freay whose telephone number is 571-272-4827. The examiner can normally be reached on Monday through Friday 8:30 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg can be reached on 571-272-4828. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Charles G Freay  
Primary Examiner  
Art Unit 3746

CGF  
January 6, 2007